IN THE CLAIMS

Please Cancel Claims 5 - 11 and 13 - 15 and provide Notice of Allowanace for Allowed Claims 1 - 4 and 12.

1. (previously submitted): A system for monitoring change in:

the intensity of; and/or
the ratio of and/or
the phase between orthogonal components in;

a spectroscopic beam of electromagnetic radiation which is caused by interaction with a material system;

said system comprising at least one lens which is of multiple element construction and positioned so that beam of electromagnetic radiation transmits therethrough, wherein, at least two elements thereof are made from different materials, such that in use the focal length for each wavelength in a range of wavelengths is within an acceptable range of focal lengths;

said at least one multiple element lens being characterized by at least one selection from the group consisting of:

a) the focal length is between forty and forty-one millimeters over a range of wavelengths of at least two-hundred to seven-hundred nanometers;

b) the focal length varies by less than five (5%) percent over a range of wavelengths of between two-hundred and five-hundred nanometers; and

c) the spot diameter at the focal length is less than seventy-five microns over a range of wavelengths of at least two-hundred to seven-hundred nanometers;

said system further comprising at least one compensator positioned so that beam of electromagnetic radiation transmits therethrough, said compensator being characterized by a selection from the group consisting of:

said at least one compensator produces a retardence of between seventy-five (75) and one-hundred-thirty (130) degrees over a range of wavelengths defined by a selection from the group consisting of:

a[[.]]_ between one-hundred-ninety (190) and seven-hundred-fifty (750) nanometers;

b[[.]]_ between two-hundred-forty-five (245) and nine-hundred (900) nanometers;

c[[.]]_ between three-hundred-eighty (380) and seventeen-hundred (1700) nanometers;

d[[.]]_ within a range of wavelengths defined by a maximum wavelength (MAXW) and a minimum wavelength (MINW) wherein the ratio of (MAXW)/(MINW) is at least one-and-eight-tenths (1.8); and

said at least one compensator produces a retardation between thirty (30.0) and less than one-hundred-thirty-five (135) degrees over a range of wavelengths specified from MINW to

MAXW by a selection from the group consisting of:

a[[.]]_ MINW less than/equal to one-hundred-ninety (190) and MAXW greater than/equal to seventeen-hundred (1700);

b[[.]]_ MINW less than/equal to two-hundred-twenty (220) and MAXW greater than/equal to one-thousand (1000) nanometers;

c[[.]]_ within a range of wavelengths defined by a maximum wavelength (MAXW) and a minimum wavelength (MINW) range where (MAXW)/(MINW) is at least four-and one-half (4.5).

2. (original): A system as in Claim 1, in which said at least one multiple element lens demonstrates birefringence.

3. (original): A system as in Claim 1, in which said at least one multiple element lens comprises at least two elements which are made from different materials independently selected from the group consisting of:

CaF_2;
BaF_2;
LiF;
MgF_2;
fused silica;
a void region;
a gas filled region;
a liquid filled region; and
a functional equivalent to a void region.

4. (original): A system as in Claim 1 in which, during data collection, said at least one compensator is caused to perform motion selected from the group consisting of:

continuously rotates; and
sequentially rotates through a plurality of discrete angles;

around an axis defined by the locus of the spectroscopic electromagnetic beam as it transmits therethrough.

5.- 11. (canceled):

12. (original): A system as in Claim 1 which is present in a Chamber configured as a selection from the group consisting of:

it comprises at least one chamber region in which is present polarization state generator comprising component(s) prior to said material system, said material system, and polarization state detector comprising component(s) after said material system;

it comprises at least three chamber regions, in one of which is present polarization state generator comprising component(s) prior to said material system, in the second of which is present the material system and in the third of which is present polarization state detector comprising component(s) after said material system;

it comprises at least two chamber regions, in one of which is present polarization state generator comprising component(s) prior to said material system and said material system, and in the second of which is present polarization state detector comprising component(s) after said material system;

it comprises at least two chamber regions, in one of which is present polarization state generator comprising component(s) prior to said material system, and in the second of which is present polarization state detector comprising component(s) after said material system and said material system.

13. - 15. (canceled):